

NEVADA DIVISION OF ENVIRONMENTAL PROTECTION

FACT SHEET

(pursuant to NAC 445A.236)

Applicant: Southern Nevada Water Authority
P.O. Box 99956
Las Vegas, NV 89153-9956

Permit Number: NV0024066

Facility Location: SNWA –Lake Mead Intake No. 3 construction dewatering discharge
Saddle Cove, Lake Mead
Clark County, Nevada
Sections 2, 3, 10, 11 and 31, T21S & 22S, R64E & 65E MDB&M

Discharge Outfalls: Outfall 002 Series: Latitude 36° 04' 50" N, Longitude 114° 47' 20" W
Outfall 003 Series: Latitude 36° 05' 45" N, Longitude 114° 46' 13" W

General: Southern Nevada Water Authority (SNWA) is constructing Intake No. 3 in Boulder Basin, Lake Mead, Clark County, Nevada. SNWA currently operates two deepwater drinking water intakes at Saddle Island on the west shore of Lake Mead approximately 5 miles northwest of Hoover Dam and 20 miles east of the center of Las Vegas, within the Lake Mead National Recreation Area. Intakes No. 1 and No. 2, each with a pumping capacity of 600 million gallons per day (MGD), require a minimum lake elevation of 1,060 feet above mean sea level (amsl), and 1,000 feet amsl, respectively, to be fully operational. As a result of historic drought, declining lake levels threaten the operation of Intake No. 1, and could threaten the operation of Intake No. 2. SNWA and its contractors are currently constructing Intake No. 3 at approximately 860 feet amsl to provide the SNWA system additional protection from loss of intake capacity, to increase system reliability by providing backup capability for Intakes No. 1 & No. 2, and to offer increased operational flexibility for accessing water at various depths and locations in Lake Mead. The permit includes dewatering discharges, water treatment plant discharges, slurry plant(s) discharges and water management for the excavation, drilling, boring and mining activities for the project. The construction project is projected to be completed in 2014.

Intake No. 3 will be located so that even at 1,000 feet amsl, water can be drawn from below the thermocline where water is of higher quality, preventing extensive modifications to existing treatment processes. The existing intakes have historically drawn water from below the thermocline. Water from the Intake No. 3 will be conveyed to the existing Alfred Merritt Smith Water Treatment Facility (AMSWTF) on the western shore of Lake Mead, near Saddle Island, and to the River Mountain WTF in Henderson.

The Intake No. 3 project does not involve any change or increase in the quantity of Colorado River water authorized for diversion and use by SNWA. The project is simply a modification of the location from which SNWA's existing Colorado River water allocation is withdrawn from the river at Lake Mead, providing SNWA flexibility to take water from different levels and locations in Lake Mead, depending on seasonal lake conditions and lake water levels.

Flow: The application requested a total discharge flow rate of 10,400 gallons per minute (gpm), equivalent to 15 million gallons per day (MGD). Current operational flows average 1,300 gpm, but as the project progresses, higher dewatering rates are anticipated.

Receiving Water Characteristics: The receiving water for the discharges is Lake Mead. Historic and current sampling of the project area provides a record of water quality in the area of the project. Lake Mead is presently sampled regularly in several locations and will continue to be sampled during the project. Lake Mead serves as the drinking water supply for the majority of the Las Vegas Valley.

Corrective Actions Sites: There are no Bureau of Corrective Actions (BCA) remediation sites within a one-mile radius of the project construction or discharge areas.

Proposed Discharge Limitations, Sampling and Monitoring Requirements: During the period beginning on the effective date of this permit, and lasting until the permit expires, the Permittee is authorized to discharge shallow groundwater dewatering discharges, water treatment plant discharges, slurry plant(s) discharges and other water management discharges for the excavation, drilling, boring and mining activities for the project, to Lake Mead.

Sediment and water management Best Management Practices (BMPs) shall be implemented to prevent water quality disturbances, sediment transport and erosion in and near the Lake as much as is practicable, in accordance with plans and information submitted to NDEP. Water quality management shall be such that the water quality in the Lake shall not be degraded below natural conditions, and the water quality shall meet the water quality standards for beneficial uses established in NAC 445A.194 are stipulated in NAC 445A.197 and the Requirements to Maintain Existing Higher Quality are stipulated in NAC 445A.195.

Water quality shall be limited and monitored by the Permittee as specified in the each of the tables and definitions in Sections I through VI. Results shall be reported on the quarterly DMR Forms.

- I. **Lake Mead Sampling Locations and Outfalls:** samples shall be taken at each of the designated sampling locations/outfalls described in Table 1.

Table 1. Sampling Locations, Outfalls, Descriptions and Locations

Sampling Points/ Outfalls	Sampling Point/Outfall Descriptions/Locations
Series 001 Sampling Points	500 feet lakeward of turbidity curtain at 1 meter in depth, at each of the three parallel locations
SP 001A	Most westerly background sampling location
SP 001B	Midpoint background sampling location
SP 001C	Most easterly background sampling location
Series 002 Outfalls	Sample at each of three discharge pipeline sampling ports
002A	Pipe One sample port prior to discharge
002B	Pipe Two sample port prior to discharge
002C	Pipe Three sample port prior to discharge
Series 003 Outfalls –during active construction	100 feet lakeward of floatation collars at two depths at each location: (within 1 meter of the surface (S) and 20 feet below surface or 5 feet above the lake bottom (D), whichever is higher)
003AS	Most westerly surface sampling location
003AD	Most westerly deep sampling location
003BS	Midpoint surface sampling location
003BD	Midpoint deep sampling location
003CS	Most easterly surface sampling location
003CD	Most easterly deep sampling location

Series 004 Sampling Points – post construction, prior to turbidity curtain removal	100 feet inside the turbidity curtain at the same locations and depths as the 003 Outfall Series (sampling to continue until all limits in Table I.A.4 are met)
004AS	Most westerly surface sampling location
004AD	Most westerly deep sampling location
004BS	Midpoint surface sampling location
004BD	Midpoint deep sampling location
004CS	Most easterly surface sampling location
004CD	Most easterly deep sampling location

II. **Lake Mead Background Monitoring & Sampling (001 Series Sampling Points):** Samples shall be taken at the three 001 Series locations described in Table 1 -001 Series. Background monitoring shall continue until the turbidity curtain is removed.

Table 2. Discharge Limits, Sampling and Monitoring Requirements

Discharge Parameters and Units		Discharge Limitations	Sampling Locations	Monitoring Frequency	Monitoring Type
Turbidity	NTU	M&R	001 Series	Monthly	Discrete
Temperature -min	°C	M&R	001 Series	Weekly	Discrete
Temperature -avg	°C	M&R	001 Series	Weekly	Discrete
Temperature -max	°C	M&R	001 Series	Weekly	Discrete
Chlorophyll-a	µg/l	M&R	001 Series	Monthly	Discrete
TSS	mg/l	M&R	001 Series	Monthly	Discrete

III. **Intake No. 3 Construction post-treatment pipe discharge monitoring and sampling (Outfall 002 Series):** Samples shall be taken at the three post-treatment pipelines' sampling ports described in the Table 1 -002 Series.

Table 3. Discharge Limits, Sampling and Monitoring Requirements

Discharge Parameters and Units		Discharge Limits	Sampling Locations	Monitoring Frequency	Monitoring Type
Flow	MGD	M&R	002 Series	Continuous	Meter
Total Flow	MGD	15.0	Σ (002A +002B +000C)	Continuous	Calculation
Nitrate	mg/l	M&R	002 Series	Weekly	Discrete
pH	S.U.	M&R	002 Series	Weekly	Discrete
TDS	mg/l	M&R	002 Series	Weekly	Discrete
Alkalinity	NTU	M&R	002 Series	Weekly	Discrete
COD	mg/l	M&R	002 Series	Weekly	Discrete
Temp -min	°C	M&R	002 Series	Weekly	Discrete
Temp -avg	°C	M&R	002 Series	Weekly	Discrete
Temp -max	°C	M&R	002 Series	Weekly	Discrete
TPH	mg/l	1.0	002 Series	Event	Discrete

IV. **Active Discharge Turbidity Curtain Monitoring/Sampling (Outfall 003 Series):** Samples shall be taken at the six locations described in the Table 1 -003 Series, as long as active construction dewatering and discharge is occurring.

Table 4. Discharge Limits, Sampling and Monitoring Requirements

Discharge Parameters & Units		Discharge Limitations	Sampling Location	Monitoring Frequency	Monitoring Type
TDS	mg/l	1000	003 Series	Weekly	Discrete
pH	S.U.	6.5 – 9.0	003 Series	Weekly	Discrete
Turbidity	NTU	25	003 Series	Weekly	Discrete
TSS	mg/l	25	003 Series	Weekly	Discrete
Nitrate	mg/l	10	003 Series	Weekly	Discrete
Chlorophyll-a	µg/l	10	003 Series	Weekly (April-Sept only)	Discrete
Temp -min	°C	M&R	003 Series	Weekly	Discrete
Temp -avg	°C	M&R	003 Series	Weekly	Discrete
Temp -max	°C	M&R	003 Series	Weekly	Discrete
ΔT -min	°C	2.0	003 Series	Weekly	Discrete
ΔT -avg	°C	2.0	003 Series	Weekly	Discrete
ΔT -max	°C	2.0	003 Series	Weekly	Discrete

V. Post-Discharge Turbidity Curtain Monitoring/Sampling (004 Series Sampling Points): After all construction activities/discharges have concluded, samples shall be taken at the six locations described in Table 1 -004 Series. The turbidity curtain shall not be removed, and monitoring shall be conducted weekly until all of the limits established in Table 5 are met.

Table 5. Discharge Limits, Sampling and Monitoring Requirements

Discharge Parameters & Units		Discharge Limitations	Sampling Location	Monitoring Frequency	Monitoring Type
TDS	mg/l	1000	004 Series	Weekly	Discrete
pH	S.U.	6.5 – 9.0	004 Series	Weekly	Discrete
Turbidity	NTU	25	004 Series	Weekly	Discrete
TSS	mg/l	25	004 Series	Weekly	Discrete
Nitrate	mg/l	10	004 Series	Weekly	Discrete
Chlorophyll-a ¹	µg/l	10	004 Series	Weekly	Discrete
Temp -min	°C	M&R	004 Series	Weekly	Discrete
Temp -avg	°C	M&R	004 Series	Weekly	Discrete
Temp -max	°C	M&R	004 Series	Weekly	Discrete
ΔT -min	°C	2.0	004 Series	Weekly	Discrete
ΔT -avg	°C	2.0	004 Series	Weekly	Discrete
ΔT -max	°C	2.0	004 Series	Weekly	Discrete

VI. Table Definitions:

NTU: Nephelometric Turbidity Units
min: minimum of weekly temperature readings
avg: average of weekly temperature readings in quarterly reporting period
µg/l: micrograms per liter
TSS: Total Suspended Solids
Δ: Greek symbol, delta, meaning difference
TDS: Total Dissolved Solids
TPH: Total Petroleum Hydrocarbons, full range, purgeable and extractable
Event: fuel leak, visible sheen, or equipment failure near active project areas

M&R: Monitor and Report
max: maximum of weekly readings
mg/l: milligrams per liter
MGD: million gallons per day
S.U.: Standard Units
COD: Chemical Oxygen Demand

Rationale for Permit Requirements: The Division has established the monitoring requirements in Tables 1-5 to ensure that the receiving water, Lake Mead, is not degraded as a result of project activities.

Flow and Total Volume: The rationale for the 30-day average discharge was explained in the Flow section of this fact sheet.

Water Quality Parameters: For background information: Turbidity, Chlorophyll-a, Temperature, and TSS; M&R. For dewatering discharge via pipe to water treatment facility: Nitrate, Ammonia, pH, Temperature, TDS, Alkalinity, COD & TPH; all M&R, except for TPH limited to 1.0 mg/l. For active construction turbidity curtain monitoring: Turbidity, pH, Temperature, Delta Temperature, TDS, TSS, Nitrate, Chlorophyll-a, & other information. For post-construction turbidity curtain monitoring, the following parameters must meet the prescribed limits prior to removing the turbidity curtain: Turbidity, pH, Temperature, Delta Temperature, TDS, TSS, Nitrate, and Chlorophyll-a. Other parameters require monitoring and reporting, but have no permit limits.

Schedule of Compliance: The Permittee shall implement and comply with the provisions of the schedule of compliance after approval by the Administrator, including in said implementation and compliance, any additions or modifications which the Administrator may make in approving the schedule of compliance:

- The Permittee shall achieve compliance with the effluent limitations upon issuance of the permit.
- By **MM DD, 2011**, the Permittee shall submit to the Division, for review and approval, an updated **Operations & Maintenance (O&M) Manual**, for the proposed dewatering and discharge activities. The **O&M** shall include a Dewatering Plan providing dewatering discharge details including discharge routing, methodology and BMPs to be utilized. The **O&M** shall also include a Sampling and Analysis Plan summarizing the monitoring, sampling, analytical, and data reporting procedures for the proposed sampling locations. Before implementing changes to an approved **O&M**, the Permittee shall submit the proposed changes to the Division for review and approval.
- **For each quarterly report**, the Permittee shall submit, the following qualitative information to the Division on the DMR forms: mass of blasting agents used (pounds), volume of grout used (cubic yards), and turbidity curtain performance (good condition, needs repair, made repairs, etc.). **The final quarterly report** shall also contain the following post-discharge, pre-curtain removal qualitative information: mass of residual blasting agents remaining (pounds).

Proposed Determination: The Division has made the tentative determination to issue the proposed permit for a period of five (5) years.

Procedures for Public Comment: The Notice of the Division's intent to issue a NPDES permit authorizing the Permittee to discharge into the Las Vegas Wash for a five-year period, subject to the conditions contained within the permit, is being sent to the **Las Vegas Review-Journal** for publication. The Notice is being mailed to interested persons on our mailing list. Anyone wishing to comment on the proposed permit can do so in writing for a period of thirty days following the date of publication of the public notice in the newspaper. The comment period can be extended at the discretion of the Administrator. The deadline date and time by which all comments are to be submitted (via postmarked mail or time-

stamped faxes, e-mails, or hand-delivered items) to the Division is **October 3, 2011 by 5:00 P.M.**

A public hearing on the proposed determination can be requested by the applicant, any affected State, any affected interstate agency, the Regional Administrator or any interested agency, person or group of persons. The request must be filed within the comment period and must indicate the interest of the person filing the request and the reasons why a hearing is warranted.

Any public hearing determined by the Administrator to be held must be conducted in the geographical area of the proposed discharge or any other area the Administrator determines to be appropriate. All public hearings must be conducted in accordance with NAC 445A.238.

The final determination of the Administrator may be appealed to the State Environmental Commission pursuant to NRS 445A.605.

Prepared by: Jeryl R. Gardner, P.E.
Date: August, 2011